

Amendment and Response Under 37 C.F.R. § 1.114

Applicant: David C. Lowery et al.

Serial No.: 10/677,120

Filed: October 1, 2003

Docket No.: 10354US01

Title: MAGNETIC RECORDING TAPE MEDIA HAVING LOW ABRASIVITY AND RELIABLE MEDIA PERFORMANCE

IN THE CLAIMS

Please cancel claim 20.

Please amend claims 1, 19, 24, and 26 as follows:

1. (Currently Amended) A magnetic recording medium comprising:
a non-magnetic substrate defining a front side and a back side; ~~and~~
a magnetic coating formed over the front side and characterized by Abrasivity Index of not greater than 350 microinches; and
a non-magnetic back coating formed over the back side of the non-magnetic substrate, the back coating including a primary, small carbon black with an average particle size between 10 nm and 25 nm and a secondary, large carbon black with an average particle size between 50 nm and 300 nm.
2. (Original) The magnetic recording medium of claim 1, wherein the Abrasivity Index is in the range of 150 – 350 microinches.
3. (Original) The magnetic recording medium of claim 1, wherein the Abrasivity Index is not greater than 300 microinches.
4. (Original) The magnetic recording medium of claim 1, wherein the magnetic coating includes a lower layer formed on the front side of the substrate and the upper layer formed over the lower layer.
5. (Original) The magnetic recording medium of claim 4, wherein the upper layer includes a magnetic metal particle dispersed in a binder and otherwise provides the Abrasivity Index.

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6. (Original) The magnetic recording medium of claim 5, wherein the magnetic metal particle is composed of at least 80% elemental iron having a coercivity in the range of 1600 – 2500 Oe as measured by VSM at 13 kOe.
7. (Original) The magnetic recording medium of claim 5, wherein the upper layer includes head cleaning agent in the range of 5.75 – 10.35 parts by weight based upon 100 part by weight of the magnetic metal particle.
8. (Original) The magnetic recording medium of claim 1, wherein the magnetic recording medium is a DLT tape.
9. (Original) The magnetic recording medium of claim 1, wherein the magnetic recording medium is configured to conform with an ECMA standard selected from the group consisting of DLT4, DLT5, and DLT6.
10. (Original) The magnetic recording medium of claim 1, wherein the magnetic coating has a coercivity of at least 1900 Oe.
11. – 15. (Cancelled)
16. (Previously Presented) The magnetic recording medium of claim 4, wherein the lower layer includes a head cleaning agent.
17. (Previously Presented) The magnetic recording medium of claim 4, wherein the lower layer includes carbon black having an average particle size of less than 20 nm.

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18. (Previously Presented) The magnetic recording medium of claim 17, wherein the lower layer includes carbon black in the range of 1 to 5 parts by weight based upon 100 parts by weight of a primary pigment included in the lower layer.

19. (Currently Amended) The magnetic recording medium of claim 1, ~~further comprising a non-magnetic back coating formed over the back side of the non-magnetic substrate, wherein the back coating including~~ includes a head cleaning agent.

20. (Cancelled)

21. (Previously Presented) The magnetic recording medium of claim 1, wherein the magnetic coating is a burnished magnetic coating.

22. (Previously Presented) The magnetic recording medium of claim 21, wherein the burnished magnetic coating is at least one of a scraped magnetic coating, a varnished magnetic coating, and a lapped magnetic coating.

23. (Previously Presented) The magnetic recording medium of claim 1, wherein the magnetic recording medium exhibits a recording density of 55 kfc/i.

24. (Currently Amended) A magnetic recording medium comprising:
a non-magnetic substrate defining a front side and a back side; ~~and~~
a magnetic coating formed over the front side, the magnetic coating including a conductive carbon black material having an average particle size of less than 20 nm, wherein the magnetic coating exhibits an Abrasivity Index in the range of 150 – 300 microinches; and
a non-magnetic back coating formed over the back side of the non-magnetic substrate, the back coating including a primary, small carbon black with an average particle size

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between 10 nm and 25 nm and a secondary, large carbon black with an average particle size between 50 nm and 300 nm.

25. (Previously Presented) The magnetic recording medium of claim 1, wherein the magnetic coating comprises a lower layer deposited on the front side of the non-magnetic substrate and an upper layer deposited on the lower layer, the upper layer selectively configured to reduce the Abrasivity Index of the magnetic coating to between about 150 – 350 microinches.

26. (Currently Amended) A magnetic recording medium comprising:
a non-magnetic substrate defining a front side and a back side; and
a magnetic coating deposited and dried on the non-magnetic substrate, the magnetic coating including a lower layer deposited on the front side of the non-magnetic substrate and an upper layer deposited on the lower layer, at least one of the lower layer and the upper layer including particles providing the dried magnetic coating with an initial abrasivity of greater than 350 microinches; and
a non-magnetic back coating formed over the back side of the non-magnetic substrate, the back coating including a primary, small carbon black with an average particle size between 10 nm and 25 nm and a secondary, large carbon black with an average particle size between 50 nm and 300 nm;
wherein the upper layer is configured to reduce the initial abrasivity of the dried magnetic coating such that the upper layer is characterized by Abrasivity Index of not greater than 350 microinches.

27. (Previously Presented) The magnetic recording medium of claim 26, wherein the particles comprise cobalt-containing iron oxide particles.